Three Peaks Primary Academy

Design and Technology

At Three Peaks Primary Academy, we believe that Design and Technology should be an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.

The children at Three Peaks are taught to acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world.

High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Design and Technology

Aims of the Design and Technology Curriculum

The National Curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

Design and Technology

Design and Technology in Early Years

During the Early Years Foundation Stage, the essential building blocks of children's design and technology capability are established. There are many opportunities for carrying out D&T-related activities in all areas of learning in the EYFS.

By the end of the EYFS, most children should be able to:

•Construct with a purpose in mind, using a variety of resources

•Use simple tools and techniques competently and appropriately

•Build and construct with a wide range of objects, selecting appropriate resources and adapting their work when necessary

•Select the tools and techniques they need to shape, assemble and join materials they are using

Specific Area of Learning **Expressive Arts and Design**	**ELG 16 Creating with Materials**	**How this is achieved in EYFS**	**Design and Technology KS1**
	• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • Share their creations, explaining the process they have used.	• Learning to construct with a purpose in mind. Children use scissors, tape, string and a hole punch to make a kite on a windy day. • Structure and joins: Following a focus on catching a star, the children built rockets using wooden blocks • Using a range of tools: Through this, children will learn about planning and adapting initial ideas to make them better. For example, a child might choose to use scissors, a stapler, elastic bands and glue to join bits together to make a toy vehicle. But they might then modify their initial idea by using masking tape. • Cooking techniques: Some children take turns stirring the mixture for a cake and then watch with fascination as it rises while cooking. They will practise stirring, mixing, pouring and blending ingredients during cookery activities. • Discussion: We give children the opportunity to discuss reasons that make activities safe or unsafe, for example hygiene, electrical awareness, and appropriate use of senses when tasting different flavourings. They will also learn to record their experiences by, for example, drawing, writing and making a tape or model.	Design • design purposeful, functional, appealing products for themselves and other users • based on design criteria • generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology Make • select from and use a range of tools and equipment to perform practical tasks [for • example, cutting, shaping, joining and finishing] • select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics Evaluate • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria Technical knowledge • build structures, exploring how they can be made stronger, stiffer and more stable • explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Design and Technology

Key Stage 1

Design and Technology National Curriculum Expectations – Key Stage 1. When designing and making, pupils should be taught to:
Design • design purposeful, functional, appealing products for themselves and other users based on design criteria • generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
Make • select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] • select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
Evaluate • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria
Technical knowledge • build structures, exploring how they can be made stronger, stiffer and more stable • explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
Design and Technology National Curriculum Expectations – Key Stage 1. When learning about cooking and nutrition, pupils should be taught to:
• use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from.

Design and Technology

Key Stage 2

Design and Technology National Curriculum Expectations – Key Stage 1. When designing and making, pupils should be taught to:
Design • use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups • generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
Make • select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities
Evaluate • investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world
Technical knowledge • apply their understanding of how to strengthen, stiffen and reinforce more complex structures • understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • apply their understanding of computing to program, monitor and control their products.
Design and Technology National Curriculum Expectations – Key Stage 2. When learning about cooking and nutrition, pupils should be taught to:
• understand and apply the principles of a healthy and varied diet • prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Design and Technology

Design and Technology Teaching Sequence

Core DT Content

Year	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
1	**Core discipline:** Mechanisms **Key Concept:** Sliders and levers	**Core discipline:** Structures **Key Concept:** Freestanding structures	**Core discipline:** Food and nutrition **Key Concept:** Preparing fruit and vegetables	**Core discipline:** Understanding materials **Key Concept:** Selecting materials **CUSP link: Materials**	**Core discipline:** Textiles **Key Concept:** Templates and joining techniques **CUSP link: Hot and cold places**	**Core discipline:** Food and nutrition **Key Concept:** Understanding a recipe
2	**Core discipline:** Textiles **Key Concept:** Exploring shape and texture	**Core discipline:** Food and nutrition **Key Concept:** Following a recipe **CUSP link: Animals, including humans (Keeping healthy)**	**Core discipline:** Mechanisms **Key Concept:** Axles and wheels	**Core discipline:** Understanding materials **Key Concept:** Manipulating materials **CUSP link: Use of everyday materials**	**Core discipline:** Food and nutrition **Key Concept:** Increasing our intake of fruit and vegetables	**Core discipline:** Structures **Key Concept:** Freestanding structures with moving parts
3	**Core discipline:** Textiles **Key Concept:** Combining materials	**Core discipline:** Food and nutrition **Key Concept:** A balanced and varied diet **CUSP link: Animals, including humans**	**Core discipline:** Mechanisms **Key Concept:** Levers and linkages **CUSP link: Forces and magnets**	**Core discipline:** Electrical systems **Key Concept:** Switches and circuits **CUSP link: Light**	**Core discipline:** Food and nutrition **Key Concept:** Adapting a recipe	**Core discipline:** Structures **Key Concept:** Developing strength in structures
4	**Core discipline:** Food and nutrition **Key Concept:** Food choices	**Core discipline:** Mechanisms **Key Concept:** Hinges	**Core discipline:** Electrical systems **Key Concept:** Switches and circuits revisited **CUSP link: Electricity**	**Core discipline:** Structures **Key Concept:** Designing structures	**Core discipline:** Textiles **Key Concept:** Fixings and fastenings	**Core discipline:** Food and nutrition **Key Concept:** Understanding dietary requirements **CUSP link: Animals, including humans (Digestion)**
5	**Core discipline:** Food and nutrition **Key Concept:** Eating seasonally	**Core discipline:** Electrical systems **Key Concept:** Complex switches and circuits	**Core discipline:** Textiles **Key Concept:** Making clothes last longer	**Core discipline:** Mechanisms **Key Concept:** Pulleys **CUSP link: Forces**	**Core discipline:** Structures **Key Concept:** Developing stability in structures	**Core discipline:** Food and nutrition **Key Concept:** Celebrating culture **CUSP link: World countries**
6	**Core discipline:** Food and nutrition **Key Concept:** Eating ethically	**Core discipline:** Mechanisms **Key Concept:** Gears	**Core discipline:** Food and nutrition **Key Concept:** Eating on a budget	**Core discipline:** Structures **Key Concept:** Designing structures revisited	**Core discipline:** Electrical systems **Key Concept:** Complex switches and circuits **CUSP link: Electricity**	**Core discipline:** Textiles **Key Concept:** Sustainable materials

UNITY SCHOOLS PARTNERSHIP

Design and Technology

Computing—Implementation

Approach – Knowledge

At Three Peaks Primary Academy, Design and Technology is taught across each year group in modules that enable pupils develop in creativity, independence, judgement and self-reflection. Each module aims to activate and build upon prior learning, including EYFS, to ensure better cognition and retention. As a school we look to master practical skills relating to Design and Technology which involves developing the skills needed to make high quality products. Through this a child will design, make, evaluate and improve their creations allowing children to develop an understanding of design thinking and seeing their designs as a process. We also want children to take inspiration from design throughout history this will involves appreciating the design process that has influenced the products we use in everyday life.

Planning

All modules have a sequenced overview outlining recommended number of sessions, key concepts, knowledge and vocabulary to be taught. All planning incorporates cooperative learning techniques, key vocabulary, core concepts and a class profile to enable all teaching staff to effectively plan and support the needs of all pupils in the classroom

Accompanying each module are knowledge notes which contains key vocabulary, information and concepts which all pupils are expected to understand and retain. They support vocabulary and concept acquisition through a well-structured sequence that is cumulative. Each Knowledge Note contains key vocabulary and key facts for the focus module

Knowledge Notes

Knowledge Notes support vocabulary and concept acquisition through a well-structured sequence that is cumulative. Knowledge Notes are frequently dual coded to provide pupils with visual calls to aid understanding and recall.

Vocabulary

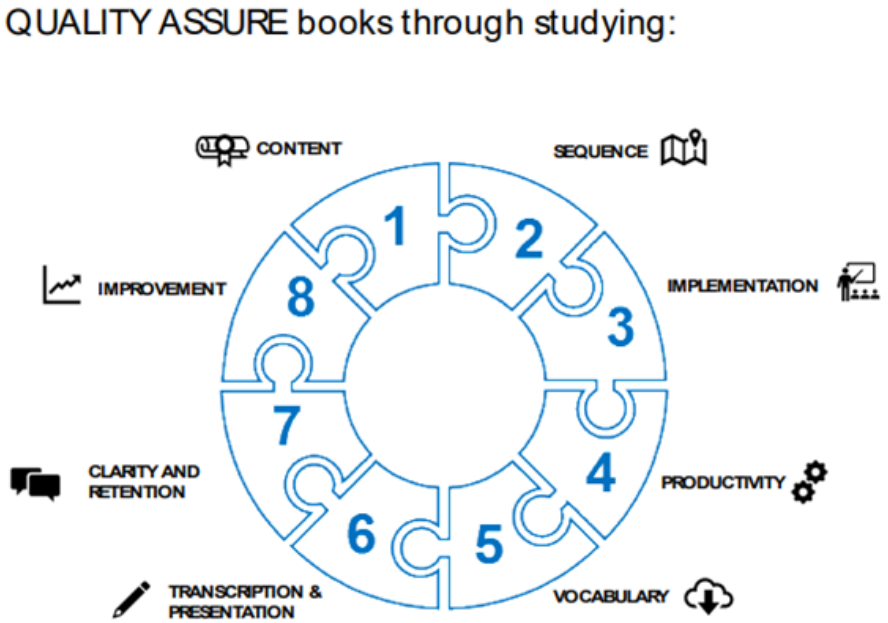
Vocabulary forms a key part of our wider curriculum. Subject specific words are incorporated in each module and pupils are encouraged to develop their own ‘Vital Vocabulary’ lists along with dual coding to expand their science vocabulary repertoire

Design and Technology

Impact will be assessed through :

Pupil Book Study

Senior leaders and subject leaders regularly undertake book studies to monitor the effectiveness of teaching and learning. This includes sessions with small groups of pupils using questioning to check and ensure information and knowledge is acquired and understood with increasing confidence. Feedback is given to teaching staff to inform future planning.



Ongoing Teacher Assessment

Teachers assess pupils throughout each session . Pupils who are identified as needing support will be supported either during post teaching interventions or in the following session as appropriate. Pupils working at above expected standard will also be identified and challenged appropriately to extend their learning. Evidence of this support or challenge and necessary feedback will be clear in books.

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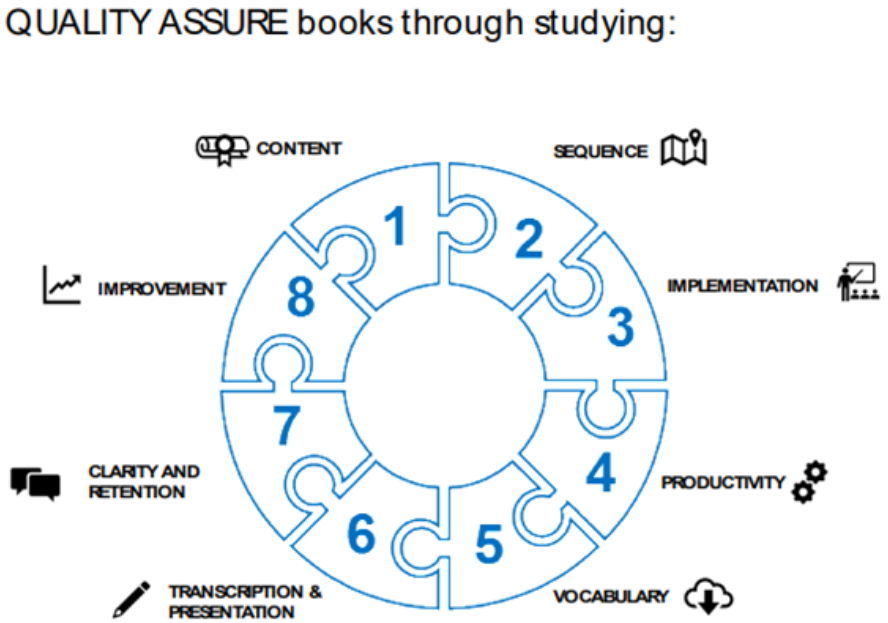

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